

E04B1/3040



COMMONWEALTH OF AUSTRALIA

(11) 417,270

**PATENT SPECIFICATION** <sup>(21)</sup> 20,378 <sup>167</sup>

Class (52) 81.3.

Int. Cl. (51) E04b.

Application Number <sup>(21)</sup> 20,378/67.

Lodged <sup>(22)</sup> 14th April, 1967 (Accompanied by a Provisional Specification).

Complete Specification  
entitled <sup>(54)</sup> **IMPROVED BUILDING STRUCTURE.**

Prefabricated building structure

Class. 81.3, Int. Cl. E04b

417,270. (20,378/67) 14 Apr. 1967. Complete Specification lodged, 11 Apr. 1968. Keith Richard Loffler: Robert Ronald Carthew & Geoffrey Weynton Nairn. Address for service in Australia—Collison & Co. 97 King William Street, Adelaide, South Australia 5000.

Claim 1. An improved building structure comprising a main surround frame supported on foundations and providing at least a major portion of the floor, a top frame of similar shape to the main frame and carrying a roof to cover at least the floor area and which top frame is supported by corner supports extending upwardly from the main frame, and a series of alcoves carried by the main frame and the top frame to project outwardly from the floor area, the various alcoves being designed and constructed to functionally complete a room by providing sleeping and/or other functional utilities, such as kitchen, dining, bathing utilities etc., whereby each alcove and its functional utilities are attached as a completed unit to the structure. [10]

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entitled (54) IMPROVED BUILDING STRUCTURE.

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Convention Priority (30) -

Applicant (71) KEITH RICHARD LOFFLER; ROBERT RONALD CARTHEW  
and GEOFFREY WEYNTON NAIRN.

Actual Inventor (72) KEITH RICHARD LOFFLER, ROBERT RONALD CARTHEW  
and GEOFFREY WEYNTON NAIRN.

Related Art (56) 281,136(24,327/62) 81.3.  
290,795(48,668/64) 93.2; 81.3.  
145,476(26,372/49) 93.2; 81.3.

The following statement is a full description of this invention, including the best method of performing it known to us :

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20,378 /67

This invention relates to an improved building structure and method of construction and in particular it relates to a structure of the type which can be readily erected from modules or components.

It is already customary practice to provide prefabricated structures in which for instance a frame is erected and cladding fixed to it together with divisions or the like to form rooms, and it is already also known to provide room sections which can be joined together to form a final structure.

The object of this invention is to provide a simpler and more effective type of structure in which a base structure can simply be erected and the components which make up the final structure simply added thereto to achieve a desired shape and result, this being achieved according to our invention by providing a base structure which can be mounted on suitable supports such as foundations or piers or the like and which forms the floor on which the persons using the structure can walk, the walls of the structure however being shaped to include the components such as doors, beds, shelves, tables and the like which are to be used in association with the structure, a top frame carrying a roof structure which then completes the unit.

Thus, according to the basic concept, our invention comprises a main frame supported on foundations, a floor supported by the main frame, a roof to cover at least the floor area, ~~and supported by vertically disposed corner supports extending upwardly from the main frame, and a series of wall units carried by the main frame to project outwardly from the floor area, the various~~

417,270

20,378 /67

*alcoves*  
units being designed functionally to complete a room by  
providing sleeping and/or other functional *utilities, such as*  
*kitchen, dining, bathing utilities etc.* ~~activities~~

To enable the invention to be fully appreciated  
an embodiment of a structure constructed according to  
this invention will now be described but it is to be  
clear that the invention need not necessarily be limited  
to this as obviously the shape of the unit, the multiplicity  
of units joined together, and other factors can be varied  
to suit requirements of the party for whom the structure  
is designed.

In the drawings:

Fig. 1 is a perspective view of a unit constructed  
according to the invention this view showing a triangular  
main frame with a roof on it and a series of modular units  
forming the walls each designed for a specific function,

Fig. 2 is a somewhat schematic vertical section of  
portion of such a structure to an enlarged scale showing  
how the walls add usable space without encroaching on the  
normal floor space of the main structure, and


Fig. 3 is a plan showing how further units can be  
added to the structure to form the larger assembly.

A base structure 1 of triangular form, although other  
shapes are equally possible, is mounted on a suitable  
foundation 2, the base structure comprising a surround  
frame 3 of steel or the like provided with means whereby  
wall sections *or alcoves* 4 can be joined thereto, a floor 5 extending  
across the area defined by the surround frame 3 so that  
when the base structure 1 is placed into position at least

20.3 78 /67

the main part of the floor is included.

At the corners of the triangular structure are upstanding corner supports 6 which carry at the top a top frame 7 of similar shape to the base structure and this top frame has on it a roof 8 which preferably slopes from one of the lines of the triangular structure and is provided with guttering and the like, but at any of the sides <sup>or roof,</sup> a window <sup>or windows are</sup> ~~is~~ preferably included so that the interior of the structure is suitably lit, ventilating means being also provided in this roof structure which may comprise an aperture with an exhaust fan or refrigeration or heating equipment or the like.



The wall structure comprises the sections 4 which connect at their base to the surround frame 3 of the base structure 1 and at their top to the top frame 7 of the roof structure but instead of these being ordinary vertical walls which would define an area similar to that of the base structure, they extend outwardly <sup>as alcoves</sup> or are shaped so that they form the furniture as it were for the structure, so that for instance a wall section can comprise a member as designated A which forms a bed unit formed by projecting the lower portion of the wall outwardly a required distance and then upwardly as at 9 to join to the top frame 7, but in this outward extension is built the bed 10 so that while the bed does not take any space so far as the floor space is concerned, the occupant of the structure can use the bed by walking to the edge of the base structure 1, the bed thus increasing as it were the floor space without having to be provided with a floor.

417,270

20,378/67

The outwardly deflected <sup>alcoves</sup> ~~walls~~ can be provided with a window 11 above the bed 10 and with a cupboard 12 beneath the bed so that the maximum use of each such section is made.

The roof is designated 8..

Similarly a kitchen could be built in this way in that an outwardly bulging wall <sup>forms an alcove</sup> ~~could be shaped~~ to include a stove or sink or the like and it will be realised that the outer wall <sup>of the alcove</sup> does not need to slope as might conveniently be done in the case of a bed but the wall can first extend outwardly from the surround frame of the base structure and then could extend vertically upward and then inwards to join onto the top frame, thereby giving more room at a higher level, but again the principle is that the whole of the content of this section is housed outside of the base structure of the <sup>alcove</sup> ~~unit~~ and does not decrease the floor area when it is incorporated.

Similarly a toilet or shower or bath section can be provided again projecting outwardly from the base structure and as in this case plumbing may be necessary it would be possible to provide a leg or other support which could engage a suitable foundation or pier or the like to take some of the weight of the overhanging structure, this being necessary only in cases where a relatively large extra floor section must be added because of the fact that a small room as it were is formed which leads from the base structure.

Book shelves, work benches and the like can all be similarly constructed to be secured to the outside of the

417,270

20.378/67

surround and top frames and while therefore then there is no decrease in the floor of the base structure due to the incorporation of the added sections, there is a material increase in area of usable space due to the outwardly projecting sections incorporating the tables, book shelves and the like.

Similarly door sections can be joined between the surround frame and the top frame so that a plurality of such structures could be put together and each could form as it were a separate room with outwardly extending <sup>alcoves</sup> ~~sections~~ on some of the walls to carry the various utilities, furniture and the like.

It will be realised from the foregoing that a very simple and effective type of structure is envisaged which will comprise firstly a base structure which will define the actual floor area of a structure, a top frame which can be supported from the base structure by means of corner or other supports, which top frame can form the roof and can have skylights or windows formed in it as well as ventilating means, the wall sections however being formed <sup>each as a complete unit</sup> ~~to provide the furnishings for the structure but projecting~~ outwardly <sup>and forming an alcove</sup> ~~from what would normally be a vertical wall so that~~ beds, tables, book shelves, toilets and the like do not encroach on the floor of the base structure but are simply added to overhang the base structure on the outside and thus while these facilities are provided there is no decrease in the basic structure which supports the various facilities.

417,270

20,378 /67

The <sup>alcoves</sup>~~units~~ can of course be constructed in any convenient manner of metal, wood, plastics or any combinations of these, and waterproofing of the structures presents no problem due to each <sup>alcove</sup>~~unit~~ which is added being joinable to the top frame and the surround frame with suitable packing or gaskets between the various structures.

It will be obvious that while it is preferred to support the floor on the main frame, in the case of a concrete or similar floor this could be first placed into position and a frame attached thereto to support the roof and to provide the openings around its perimeter which can then be infilled by the <sup>alcoves</sup>~~wall units~~ but the <sup>alcoves</sup>~~wall units~~ will be functionally designed so as to provide sleeping and/or other functional <sup>utilities</sup>~~activities~~ and to include beds, tables, shelves, or the like which will be disposed <sup>in the alcoves</sup>~~substantially~~ outside of the floor area so as not to encroach on the floor area, ~~but to provide outward extensions.~~



20,378 /67

The claims defining the invention are as follows:

1. An improved building structure comprising a main surround frame supported on foundations and providing at least a major portion of the floor, a top frame of similar shape to the main frame and carrying a roof to cover at least the floor area and which top frame is supported by corner supports extending upwardly from the main frame, and a series of alcoves carried by the main frame and the top frame to project outwardly from the floor area, the various alcoves being designed and constructed to functionally complete a room by providing sleeping and/or other functional utilities, such as kitchen, dining, bathing utilities etc., whereby each alcove and its functional utilities are attached as a completed unit to the structure.

2. An improved building structure according to claim 1 characterised in that the roof includes windows.

3. An improved building structure according to claim 1 or 2 characterised in that the alcoves include windows.

4. An improved building structure according to any preceding claim characterised in that a plurality of main frames are arranged in co<sup>e</sup>acting relationship to provide a larger combined floor area and roof area but each supporting a series of alcoves to complete a structure.

20,378 /67

5. An improved building structure according to any preceding claim characterised in that the alcoves extend outwardly from their attachment to the main frame a sufficient distance to accommodate beds, shelving, desks, or the like without encroaching materially on to the floor area.

6. An improved building structure arranged substantially as described and illustrated.

Dated this 15th day of September, 1971.

KEITH RICHARD LOFFLER, ROBERT •  
RONALD CARTHEW and GEOFFREY  
WEYNTON NAIRN,  
By their Patent Attorneys,  
COLLISON & CO.

20,378/67

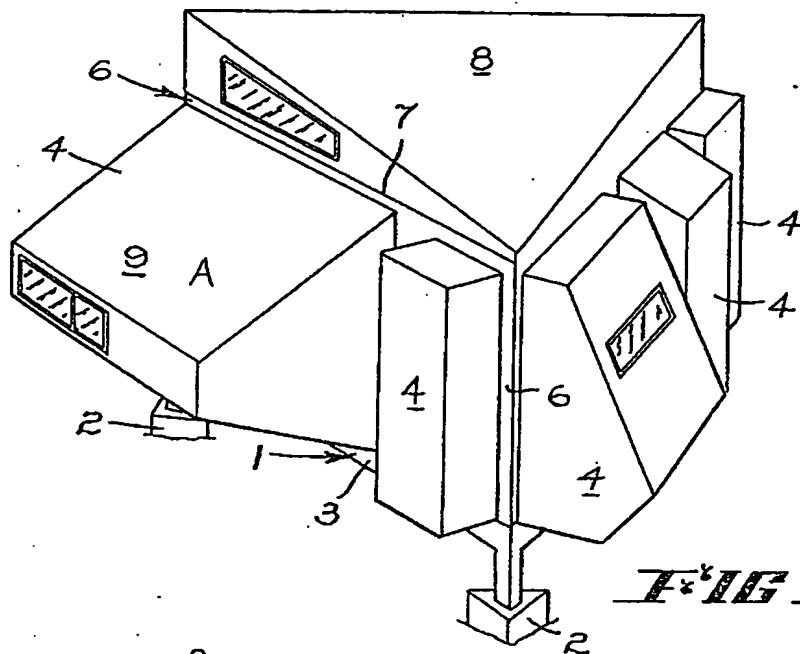


FIG 1

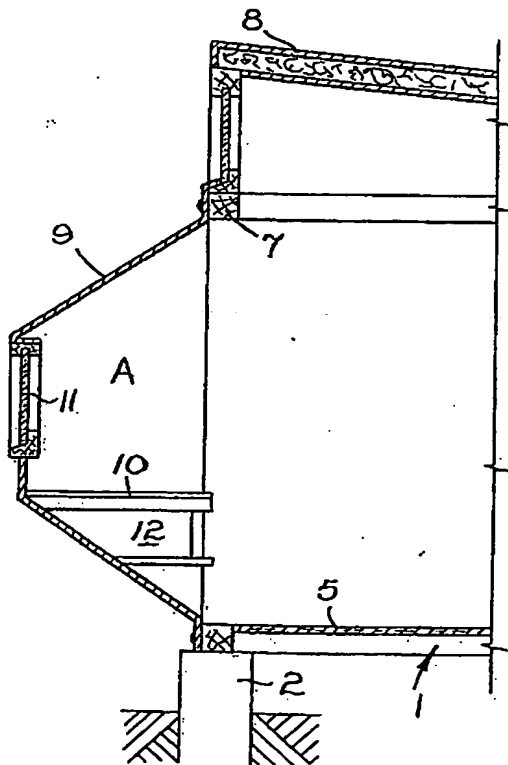


FIG 2

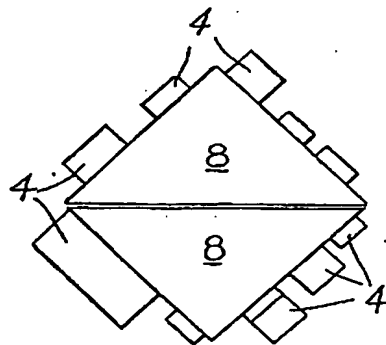


FIG 3

417270

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